Please note that Cypress is an Infineon Technologies Company.
The document following this cover page is marked as “Cypress” document as this is the company that originally developed the product. Please note that Infineon will continue to offer the product to new and existing customers as part of the Infineon product portfolio.

Continuity of document content
The fact that Infineon offers the following product as part of the Infineon product portfolio does not lead to any changes to this document. Future revisions will occur when appropriate, and any changes will be set out on the document history page.

Continuity of ordering part numbers
Infineon continues to support existing part numbers. Please continue to use the ordering part numbers listed in the datasheet for ordering.

Cypress Semiconductor
Product Qualification Plan

QTP# 102204 VERSION *G
August 2014

1Meg Serial Non-Volatile SRAM Product Family S8 Technology, CMI (Fab 4)	
CY14B101PA	3V 1M SPI RTC nvSRAM Device
CY14C101PA	2.5V 1M SPI RTC nvSRAM Device
CY14E101PA	5V 1M SPI RTC nvSRAM Device
CY14B101I	3V 1M I2C RTC nvSRAM Device
CG7976AA	3V 1M I2C RTC nvSRAM Device
CY14C101I	2.5V 1M I2C RTC nvSRAM Device
CY14E101I	5V 1M I2C RTC nvSRAM Device
CY14B101Q1A / CY14B101Q2A / CY14B101Q3A	3V 1M SPI non-RTC nvSRAM Device
CY14C101Q1A / CY14C101Q2A / CY14C101Q3A	2.5V 1M SPI non-RTC nvSRAM Device
CY14E101Q1A / CY14E101Q2A / CY14E101Q3A	5V 1M SPI non-RTC nvSRAM Device
CY14B101J1 / CY14B101J2 / CY14B101J3	3V 1M I2C non-RTC nvSRAM Device
CY14C101J1 / CY14C101J2 / CY14C101J3	2.5V 1M I2C non-RTC nvSRAM Device
CY14E101J1 / CY14E101J2 / CY14E101J3	5V 1M I2C non-RTC nvSRAM Device
CY14B512PA	3V 512K SPI RTC nvSRAM Device
CY14C512PA	2.5V 512K SPI RTC nvSRAM Device
CY14E512PA	5V 512K SPI RTC nvSRAM Device
CY14B512I	3V 512K I2C RTC nvSRAM Device
CY14C512I	2.5V 512K I2C RTC nvSRAM Device
CY14E512I	5V 512K I2C RTC nvSRAM Device
CY14B512Q1A / CY14B512Q2A / CY14B512Q3A	3V 512K SPI non-RTC nvSRAM Device
CY14C512Q1A / CY14C512Q2A / CY14C512Q3A	2.5V 512K SPI non-RTC nvSRAM Device
CY14E512Q1A / CY14E512Q2A / CY14E512Q3A	5V 512K SPI non-RTC nvSRAM Device
CY14B512J1 / CY14B512J2 / CY14B512J3	3V 512K I2C non-RTC nvSRAM Device
CY14C512J1 / CY14C512J2 / CY14C512J3	2.5V 512K I2C non-RTC nvSRAM Device
CY14E512J1 / CY14E512J2 / CY14E512J3	5V 512K I2C non-RTC nvSRAM Device
CY14B256PA	3V 256K SPI RTC nvSRAM Device
CY14C256PA	2.5V 256K SPI RTC nvSRAM Device
CY14E256PA	5V 256K SPI RTC nvSRAM Device
CY14B256I	3V 256K I2C RTC nvSRAM Device
CY14C256I	2.5V 256K I2C RTC nvSRAM Device
CY14E256I	5V 256K I2C RTC nvSRAM Device
CY14B256Q1A / CY14B256Q2A / CY14B256Q3A	3V 256K SPI non-RTC nvSRAM Device
CY14C256Q1A / CY14C256Q2A / CY14C256Q3A	2.5V 256K SPI non-RTC nvSRAM Device

CY14E256Q1A / CY14E256Q2A / CY14E256Q3A	**5V 256K SPI non-RTC nvSRAM Device**
CY14MB256J1/ CY14MB256J2/ CY14MB256J3	**3V 256K I2C non-RTC nvSRAM Device**
CY14MC256J1/ CY14MC256J2/ CY14MC256J3	**2.5V 256K I2C non-RTC nvSRAM Device**
CY14ME256J1/ CY14ME256J2/ CY14ME256J3	**5V 256K I2C non-RTC nvSRAM Device**
CY14B064PA	**3V 64K SPI RTC nvSRAM Device**
CY14C064PA	**2.5V 64K SPI RTC nvSRAM Device**
CY14E064PA	**5V 64K SPI RTC nvSRAM Device**
CY14B064I	**3V 64K I2C RTC nvSRAM Device**
CY14C064I	**2.5V 64K I2C RTC nvSRAM Device**
CY14E064I	**5V 64K I2C RTC nvSRAM Device**
CY14MB064Q1A / CY14MB064Q2A / CY14B064Q3A	**3V 064K SPI non-RTC nvSRAM Device**
CY14MC064Q1A / CY14MC064Q2A / CY14MC064Q3A	**2.5V 064K SPI non-RTC nvSRAM Device**
CY14ME064Q1A / CY14ME064Q2A / CY14ME064Q3A	**5V 064K SPI non-RTC nvSRAM Device**
CY14MB064J1/ CY14MB064J2/ CY14MB064J3	**3V 064K I2C non-RTC nvSRAM Device**
CY14MC064J1/ CY14MC064J2/ CY14MC064J3	**2.5V 064K I2C non-RTC nvSRAM Device**
CY14ME064J1/ CY14ME064J2/ CY14ME064J3	**5V 064K I2C non-RTC nvSRAM Device**
CY14MB064Q2A-SXQ	**3V 64K SPI non-RTC nvSRAM 105C Temp grade Device**
CY14ME064Q2A-SXQ	**5V 64K SPI non-RTC nvSRAM 105C Temp grade Device**
CY14ME064J2-SXQ	**5V 64K I2C non-RTC nvSRAM 105C Temp grade Device**

FOR ANY QUESTIONS ON THIS REPORT, PLEAE CONTACT
reliability@cypress.com or via a CYLINK CRM CASE

Prepared By:
Honesto Sintos
Reliability Engineer

Reviewed By:
Zhaomin Ji
Reliability Manager

Approved By:
Richard Oshiro
Reliability Director

QUALIFICATION HISTORY

Qual Report		Description of Qualification Purpose		Date Comp
071304		To qualify S8 SONOS technology and 4M nvSRAM devices CY14B104L / CY14B104N (7C14104AC base die) using S8TNV-5R, fabricated at Cypress Minnesota CMI (Fab4)		Nov 2008
102204		To qualify Indus 1M serial nvSRAM using S8 technology at CMI (Fab4)		June 2010
122802		To qualify Indus 1M serial nvSRAM 5V device option		Sep 2012

PRODUCT DESCRIPTION (for qualification)	
Purpose: Qualification of Indus 1M nvSRAM product at CMI (Fab 4) using S8TNV-5R technology	
Marketing Part #:	CY14B/C/E101PA*, CY14B/C/E101I*, CY14B/C/E101Q1/2/3°*, CY14B/C/E101J1/2/3* CY14B/C/E512PA*, CY14B/C/E512I*, CY14B/C/E512Q1/2/3°*, CY14B/C/E512J1/2/3* CY14B/C/E256PA*, CY14B/C/E256I*, CY14B/C/E256Q1/2/3°*, CY14B/C/E256J1/2/3* CY14B/C/E064PA*, CY14B/C/E064I*, CY14B/C/E064Q1/2/3°*, CY14B/C/E064J1/2/3*
Device Description:	2.5V & 3V & 5V Commercial/Industrial, available in 8/16-Lead SOIC
Cypress Division:	Cypress Semiconductor Corporation – MPD

TECHNOLOGY/FAB PROCESS DESCRIPTION – S8TNV-5R			
Number of Metal Layers:	3	Metal Composition:	Metal 1: 100ª Ti / 3200ª Al -0.5%Cu / 300ª TiW Metal 2: 100ª Ti / 3200ª Al -0.5%Cu / 300ª TiW Metal 3: 150ª Ti / 7200ª Al -0.5%Cu / 300ª TiW
Passivation Type:		7000 +/- 2000A Nitride	
Generic Process Technology/Design Rule (drawn):		S8TNV-5R/0.13µm	
Gate Oxide Material/Thickness (MOS):		SiO2 /110A & SiO2/32A	
Name/Location of Die Fab (prime) Facility:		Cypress Semiconductor – Bloomington, MN	
Die Fab Line ID/Wafer Process ID:		Fab4 / S8TNV-5	

PACKAGE AVAILABILITY

PACKAGE	ASSEMBLY FACILITY SITE
8L-SOIC	CML-RA, Amkor-M
16L-SOIC	Amkor-M, KYEC

Note: Package Qualification details upon request

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	SZ815
Package Outline, Type, or Name:	8-Lead SOIC
Mold Compound Name/Manufacturer:	MP8500/ Nitto
Mold Compound Flammability Rating:	V-O per UL94
Oxygen Rating Index:	None
Lead Frame Material:	Copper
Lead Finish, Composition / Thickness:	NiPdAu
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	100% Saw
Die Attach Supplier:	Henkel
Die Attach Material:	QMI-509
Die Attach Method:	Epoxy
Bond Diagram Designation:	001-63209
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au / 0.9 mil
Thermal Resistance Theta JA °C/W:	101.8C/W°C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	001-69914
Name/Location of Assembly (prime) facility:	CML – RA
MSL Level	3
Reflow Profile	260C

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	SZ815 / SZ163
Package Outline, Type, or Name:	8-Lead SOIC / 16-Lead SOIC
Mold Compound Name/Manufacturer:	G600
Mold Compound Flammability Rating:	V-O per UL94
Oxygen Rating Index:	None
Lead Frame Material:	Copper
Lead Finish, Composition / Thickness:	Pure Sn
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	100% Saw
Die Attach Supplier:	Ablestik
Die Attach Material:	8290
Die Attach Method:	Epoxy
Bond Diagram Designation:	001-63209
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au / 0.8 mil
Thermal Resistance Theta JA °C/W:	101.8C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	49-24026
Name/Location of Assembly (prime) facility:	M-Amkor Philippines
MSL Level	3
Reflow Profile	260C

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENT

Stress/Test	Test Condition (Temp/Bias)	Result P/F
High Temperature Operating Life Early Failure Rate (EFR)	Dynamic Operating Condition, 2.7V/3.3V/5.5V, 150°C/48H or 125°C/96H JESD22-A-108-B	P
High Temperature Operating Life Latent Failure Rate (LFR)	Dynamic Operating Condition, 2.7V/3.3V/5.5V, 150°C/500H or 125°C/1000H JESD22-A-108-B	P
Pre/Post LFR AC/DC Char	AC/DC Critical Parameter Char at LFR 0hrs, 80hrs & 500hrs	P
Endurance	1 Million Cycles @ 90C, Per datasheet	P
Data Retention	150°C, 1000 Hours	P
Temperature Cycle	-65^0C to 150^0C, JESD22-A-104 500 Cycs, Require Precondition	P
High Accelerated Saturation Test (HAST)	130°C, 3.63V, 85%RH, JESD22-A-110-B 128 Hours, Require Precondition	P
Pressure Cooker	121°C/100%RH, JESD22-A102-C 168 Hours, Require Precondition	P
Precondition	JESD22 Moisture Sensitivity	P
Electrostatic Discharge Human Body Model (ESD-HBM)	2,200V, JESD22-A114E	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	500V, JESD22-C101C	P
Electrostatic Discharge Machine Model (ESD-MM)	200V, JESD22-A115-A	P
Latch-up Sensitivity	5.4V,± 200mA, 125°C, EIA/JESD78	P
Age Bond Strength	Mil-Std-883, Method 2011	P
Acoustic	MSL 3	P
Soft Error (Alpha Particle)	JESD89A	P
Soft Error (Neutron/Proton)	JESD89A	P
SEM X-Section	XY audit at center wafer and edge wafer	P
Low Temperature Operating Life Test	Dynamic Operating Condition, 2.7V, -30°C, 500 Hours	P
High Temp Steady State Life Test	Static Operating Condition, 2.7V, 150°C, 1000 Hours	P

RELIABILITY FAILURE RATE SUMMARY

Stress/Test	Device Tested/ Device Hours	# Fails	Activation Energy	Thermal AF[4]	Failure Rate
High Temperature Operating Life Early Failure Rate	8,571 Devices*	0	N/A	N/A	0 PPM
High Temperature Operating Life[1,2,] Long Term Failure Rate	537,816 DHRs**	0	0.7	170	10 FITs
	65,856 DHRs*	0	0.7	55	

- *EFR data is based on QTP#102204 &QTP#122802,
- **LFR data from QTP#071304&QTP#102204
- ***LFR data from QTP#122802

[1] Assuming an ambient temperature of 55°C and a junction temperature rise of 15°C.
[2] Chi-squared 60% estimations used to calculate the failure rate.
[3] Thermal Acceleration Factor is calculated from the Arrhenius equation

$$AF = \exp\left[\frac{E_A}{k}\left[\frac{1}{T_2} - \frac{1}{T_1}\right]\right]$$

where:

E_A =The Activation Energy of the defect mechanism.
K = Boltzmann's constant = 8.62×10^{-5} eV/Kelvin.
T_1 is the junction temperature of the device under stress and T_2 is the junction temperature of the device at use conditions.

Reliability Test Data

QTP #: 071304

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE, 150C, 2.7V, Vcc Max							
CY14B104L (7C14104AC)	4811240	*610819876*	*CML-RA*	48	1222	0	
CY14B104L (7C14104AC)	4814841	*610832326*	*CML-RA*	48	1316	0	
CY14B104L (7C14104AC)	4817306	*610830615*	*CML-RA*	48	932	0	
CY14B104L (7C14104AC)	4819437	*610842294*	*CML-RA*	48	813	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE, 150C, 2.7V, Vcc Max							
CY14B104L (7C14104AC)	4811240	*610819876*	*CML-RA*	500	120	0	
CY14B104L (7C14104AC)	4814841	*610832326*	*CML-RA*	500	120	0	
CY14B104L (7C14104AC)	4817306	*610830615*	*CML-RA*	500	119	0	
CY14B104L (7C14104AC)	4819437	*610842294*	*CML-RA*	500	119	0	
STRESS: Pre-/ Post HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE CHAR							
CY14B104L (7C14104AC)	4811240	*610819876*	*CML-RA*	80/500	10	0	
CY14B104L (7C14104AC)	4814841	*610832326*	*CML-RA*	80/500	10	0	
CY14B104L (7C14104AC)	4817306	*610830615*	*CML-RA*	80/500	10	0	
CY14B104L (7C14104AC)	4819437	*610842294*	*CML-RA*	80/500	10	0	
STRESS: ENDURANCE, 200K CYCLES, 90C							
CY14B104L (7C14104AC)	4811240	*610819876*	*CML-RA*	COMP	80	0	
CY14B104L (7C14104AC)	4817305	*610841260*	*CML-RA*	COMP	77	0	
CY14B104L (7C14104AC)	4817306	*610830615*	*CML-RA*	COMP	160	0	
CY14B104L (7C14104AC)	4819437	*610842294*	*CML-RA*	COMP	80	0	
CY14B104L (7C14104AC)	4817306/4818074		*CML-RA*	COMP	3307	0	
STRESS: DATA RETENTION, 150C							
CY14B104L (7C14104AC)	4817306	*610830615*	*CML-RA*	1000	77	0	
CY14B104L (WAFER)	4817306	*610830615*	*CML-RA*	1008	228	0	
CY14B104L (7C14104AC)	4817305	*610841260*	*CML-RA*	1000	80	0	
CY14B104L (WAFER)	4817305	*610841260*	*CML-RA*	1008	216	0	
CY14B104L (7C14104AC)	4818074	*N/A*	*CML-RA*	1000	80	0	
CY14B104L (WAFER)	4818074	*N/A*	*CML-RA*	1008	402	0	

Reliability Test Data

QTP #: 071304

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ESD-HUMAN BODY CIRCUIT PER JEDEC EIA/JESD22-A114-B, 2,200V							
CY14B104L (7C14104AC)	4807004	*610812949*	*CML-RA*	COMP	8	0	
CY14B104L (7C14104AC)	4817306	*610830615*	*CML-RA*	COMP	8	0	
CY14B104L (7C14104AC)	4811240	*610819876*	*CML-RA*	COMP	8	0	
STRESS: ESD-CHARGE DEVICE MODEL, 500V							
CY14B104L (7C14104AC)	4807004	*610812949*	*CML-RA*	COMP	9	0	
CY14B104L (7C14104AC)	4817306	*610830615*	*CML-RA*	COMP	9	0	
CY14B104L (7C14104AC)	4811240	*610819876*	*CML-RA*	COMP	9	0	
STRESS: ESD-MACHINE MODEL, 200V							
CY14B104L (7C14104AC)	4807004	*610812949*	*CML-RA*	COMP	5	0	
CY14B104L (7C14104AC)	4817306	*610830615*	*CML-RA*	COMP	5	0	
CY14B104L (7C14104AC)	4811240	*610819876*	*CML-RA*	COMP	5	0	
STRESS: HI-ACCEL SATURATION TEST, 130C, 85%RH, 1.98V, PRE COND 192 HR 30C/60%RH, MSL3							
CY14B104L (7C14104AC)	4811240	*610819876*	*CML-RA*	128	77	0	
CY14B104L (7C14104AC)	4814841	*610832326*	*CML-RA*	128	80	0	
CY14B104L (7C14104AC)	4817306	*610830615*	*CML-RA*	128	77	0	
STRESS: PRESSURE COOKER TEST, 121C, 100%RH, 15 Psig, PRE COND 192 HR 30C/60%RH, MSL3							
CY14B104L (7C14104AC)	4807004	*610812949*	*CML-RA*	168	77	0	
CY14B104L (7C14104AC)	4807004	*610812949*	*CML-RA*	268	76	0	
CY14B104L (7C14104AC)	4814841	*610832326*	*CML-RA*	168	80	0	
CY14B104L (7C14104AC)	4817306	*610830615*	*CML-RA*	168	80	0	
CY14B104L (7C14104AC)	4817306	*610830615*	*CML-RA*	288	80	0	
STRESS: TEMPERATURE CYCLE COND. C, -65C TO 150C, PRE COND 192 HRS 30C/60%RH, MSL3							
CY14B104L (7C14104AC)	4807004	*610812949*	*CML-RA*	1000	77	0	
CY14B104L (7C14104AC)	4817306	*610830615*	*CML-RA*	1000	80	0	
CY14B104L (7C14104AC)	4814841	*610832326*	*CML-RA*	500	80	0	
STRESS: STATIC LATCH-UP TESTING, 125C, 5.4V, ±200mA							
CY14B104L (7C14104AC)	4807004	*610812949*	*CML-RA*	COMP	6	0	
CY14B104L (7C14104AC)	4814841	*610832326*	*CML-RA*	COMP	6	0	
CY14B104L (7C14104AC)	4819437	*610842294*	*CML-RA*	COMP	6	0	

Reliability Test Data

QTP #: 071304

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: AGE BOND							
CY14B104L (7C14104AC)	4807004	*610812949*	*CML-RA*	COMP	10	0	
CY14B104L (7C14104AC)	4817306	*610830615*	*CML-RA*	COMP	10	0	
CY14B104L (WAFER)	4818074	*N/A*	*CML-RA*	COMP	10	0	
STRESS: ACOUSTIC-MSL3							
CY14B104L (7C14104AC)	4807004	*610812949*	*CML-RA*	COMP	15	0	
CY14B104L (7C14104AC)	4817306	*610830615*	*CML-RA*	COMP	15	0	
CY14B104L (7C14104AC)	4814841	*610832326*	*CML-RA*	COMP	15	0	
STRESS : SER – ALPHA PARTICLE, 3-TEPM, 3-VOLTAGE, FIT=550 FIT/Mbit @ 85C, Vcc Nom							
CY14B104L (7C14104AC)	4811240	*610819876*	*CML-RA*	COMP	3	0	
CY14B104L (7C14104AC)	4817306	*610830615*	*CML-RA*	COMP	3	0	
CY14B104L (7C14104AC)	4819437	*610842294*	*CML-RA*	COMP	3	0	
STRESS: SER – NEUTRON/PROTON							
CY14B104L (7C14104AC)	4808220	*N/A*	*CML-RA*	COMP	3	0	
STRESS: LOW TEMPERATURE OPERATING LIFE TEST, -30C, 2.7V, Vcc Max							
CY14B104L (7C14104AC)	4817306	*610830615*	*CML-RA*	500	77	0	
STRESS: HIGH TEMP STEADY STATE LIFE TEST, 150C, 2.7V, Vcc Max							
CY14B104L (7C14104AC)	4811240	*610819876*	*CML-RA*	1000	76	0	

Reliability Test Data

QTP #: 102204

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE, 150C, 3.3V, Vcc Max							
CY14MB064Q2A (7C1436B5A)	4033346	*611113629*	*CML-RA*	48	631	0	
CY14MB064J2 (7C14104B)	4033346	*611113777*	*CML-RA*	48	1461	0	
CY14B101Q2A (7C1431B5A)	4034960	*611109619*	*M-PHIL*	48	1073	0	
CY14B101Q1A (7C1431B9A)	4050477	*611118869*	*CML-RA*	48	883	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE, 150C, 3.3V, Vcc Max							
CY14B101Q2A (7C1431B5A)	4034960	*611109619*	*M-PHIL*	80	1050	0	
CY14B101Q2A (7C1431B5A)	4034960	*611109619*	*M-PHIL*	168	130	0	
CY14MB064Q2A (7C1436B5A)	4033346	*611113629*	*CML-RA*	80	618	0	
CY14MB064Q2A (7C1436B5A)	4033346	*611113629*	*CML-RA*	168	194	0	
CY14MB064J2 (7C14104B)	4033346	*611113777*	*CML-RA*	80	1442	0	
CY14B101Q1A (7C1431B9A)	4050477	*611118869*	*CML-RA*	168	128	0	
STRESS: Pre-/ Post HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE CHAR							
CY14B101Q1A (7C1431B9A)	4050477	*611118869*	*CML-RA*	COMP	10	0	
CY14ME064Q2A (7C1436E5A)	4050477	*611118870*	*CML-RA*	COMP	10	0	
STRESS: ENDURANCE, 1M CYCLES+168 HOURS DATA RETENTION							
CY14B101Q2A (7C1431B5A)	4032722	*611055561*	*CML-RA*	168	39	0	
CY14E101PA (7C1431E3A)	4032722	*611056066*	*CML-RA*	168	41	0	
STRESS: DATA RETENTION (150C)							
CY14B101Q2A (7C1431B5A)	4032722	*611055561*	*CML-RA*	500	80	0	
CY14B101Q2A (7C1431B5A)	4032722	*611055561*	*CML-RA*	1000	80	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER JEDEC EIA/JESD22-A114-B, 2,200V							
CY14B101Q2A (7C1431B5A)	4032722	*611055561*	*CML-RA*	COMP	8	0	
CY14E101Q2A (7C1431E5A)	4032722	*611055560*	*CML-RA*	COMP	8	0	
CY14E101J2 (7C1431ECA)	4032722	*611056167*	*CML-RA*	COMP	8	0	
CY14E101PA (7C1431E3A)	4032722	*611056066*	*M-PHIL*	COMP	8	0	
CY14B101PA (7C1431B3A)	4032722	*611056060*	*M-PHIL*	COMP	8	0	
CY14E101Q1A (7C1431E9A)	4032722	*611055556*	*CML-RA*	COMP	8	0	
CY14E101PA (7C1431E9A)	4034960	611109616	M-PHIL	COMP	8	0	

Reliability Test Data

QTP #: 102204

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ESD-CHARGE DEVICE MODEL, 500V							
CY14B101Q2A (7C1431B5A)	4032722	*611055561*	*CML-RA*	COMP	9	0	
CY14E101PA (7C1431E3A)	4032722	*611056066*	*M-PHIL*	COMP	9	0	
CY14B101PA (7C1431B3A)	4032722	*611056060*	*M-PHIL*	COMP	9	0	
CY14E101Q1A (7C1431E9A)	4032722	*611055556*	*CML-RA*	COMP	9	0	
STRESS: ESD-MACHINE MODEL, 200V							
CY14E101Q2A (7C1431E5A)	4032722	*611055560*	*CML-RA*	COMP	5	0	
CY14E101PA (7C1431E9A)	4034960	*611109616*	*M-PHIL*	COMP	5	0	
CY14E101J2 (7C1431E3A)	4034960	*611109614*	*M-PHIL*	COMP	5	0	
STRESS: PRESSURE COOKER TEST, 121C, 100%RH, 15 Psig, PRE COND 192 HR 30C/60%RH, MSL3							
CY14B101Q2A (7C1431B5A)	4032722	*611055561*	*CML-RA*	168	80	0	
CY14B101Q2A (7C1431B5A)	4032722	*611055561*	*CML-RA*	288	80	0	
STRESS: TEMPERATURE CYCLE COND. C, -65C TO 150C, PRE COND 192 HRS 30C/60%RH, MSL3							
CY14B101Q2A (7C1431B5A)	4032722	*611055561*	*CML-RA*	500	80	0	
CY14B101Q2A (7C1431B5A)	4032722	*611055561*	*CML-RA*	1000	80	0	
***STRESS: STATIC LATCH-UP TESTING, 125C,* ±140mA**							
CY14B101Q2A (7C1431B5A)	4032722	*611055561*	*CML-RA*	COMP	6	0	
CY14B101Q1A (7C1431B9A)	4032722	*611057658*	*M-PHIL*	COMP	6	0	
CY14E101PA (7C1431E3A)	4032722	*611056066*	*M-PHIL*	COMP	6	0	
CY14B101PA (7C1431B3A)	4032722	*611056060*	*M-PHIL*	COMP	6	0	
CY14E101Q1A (7C1431E9A)	4032722	*611055556*	*CML-RA*	COMP	6	0	
CY14E101PA (7C1431E9A)	4034960	*611109616*	*M-PHIL*	COMP	6	0	
CY14B101PA (7C1431B3A)	4034960	*611109618*	*M-PHIL*	COMP	6	0	
STRESS: ACOUSTIC-MSL3							
CY14B101Q2A (7C1431B5A)	4032722	*611055561*	*CML-RA*	COMP	15	0	
STRESS : SER – ALPHA PARTICLE, 3-TEPM, 3-VOLTAGE, @ 85C, Vcc Nom							
CY14E101Q2A (7C14104B)	4034960	*611109692*	*M-PHIL*	COMP	3	0	

Reliability Test Data

QTP #: 122802

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE, 125C, 5.5V, Vcc Max							
CY14ME064Q2A (7C1436B5A)	4228534	611230237	*CML-RA*	96	1201	0	
CY14ME064Q2A (7C1436B5A)	4229040	611230238	*CML-RA*	96	1939	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE, 125C, 3.3V, Vcc Max							
CY14MB064Q2A (7C1436B5A)	4229040	611230171	*CML-RA*	96	697	0	
CY14MB064Q2A (7C1436B5A)	4228534	611230172	*CML-RA*	96	686	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE, 125C, 5.5V, Vcc Max							
CY14ME064Q2A (7C1436B5A)	4228534	611230237	*CML-RA*	168	108	0	
CY14ME064Q2A (7C1436B5A)	4229040	611230238	*CML-RA*	168	108	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE, 125C, 3.3V, Vcc Max							
CY14MB064Q2A (7C1436B5A)	4229040	611230171	*CML-RA*	168	88	0	
CY14MB064Q2A (7C1436B5A)	4228534	611230172	*CML-RA*	168	88	0	
STRESS: Pre-/ Post HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE CHAR							
CY14ME064Q2A (7C1436B5A)	4228534	611230237	*CML-RA*	COMP	10	0	
CY14ME064Q2A (7C1436B5A)	4229040	611230238	*CML-RA*	COMP	10	0	
CY14MB064Q2A (7C1436B5A)	4229040	611230171	*CML-RA*	COMP	10	0	
CY14MB064Q2A (7C1436B5A)	4228534	611230172	*CML-RA*	COMP	10	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER JEDEC EIA/JESD22-A114-B, 2,200V							
CY14MB064Q2A (7C1436B5A)	4228534	611229009	*CML-RA*	COMP	8	0	
CY14MB064Q2A (7C1436B5A)	4228534	611229013	*CML-RA*	COMP	8	0	
CY14MB064Q2A (7C1436B5A)	4228534	611229012	*CML-RA*	COMP	8	0	
STRESS: ESD-CHARGE DEVICE MODEL, 500V							
CY14MB064Q2A (7C1436B5A)	4228534	611229009	*CML-RA*	COMP	9	0	
CY14MB064Q2A (7C1436B5A)	4228534	611229013	*CML-RA*	COMP	9	0	
CY14MB064Q2A (7C1436B5A)	4228534	611229012	*CML-RA*	COMP	9	0	
STRESS: ESD-MACHINE MODEL, 200V							
CY14MB064Q2A (7C1436B5A)	4228534	611229009	*CML-RA*	COMP	5	0	
CY14MB064Q2A (7C1436B5A)	4228534	611229013	*CML-RA*	COMP	5	0	

Reliability Test Data

QTP #: 122802

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: STATIC LATCH-UP TESTING, 85C/125C, ±140mA							
CY14MB064Q2A (7C1436B5A)	4228534	611229011	*CML-RA*	COMP	6	0	
CY14MB064Q2A (7C1436B5A)	4228534	611229012	*CML-RA*	COMP	6	0	
STRESS: ACOUSTIC-MSL3							
CY14MB064Q2A (7C1436B5A)	4228534	611229009	*CML-RA*	COMP	15	0	
STRESS: PRESSURE COOKER TEST, 121C, 100%RH, 15 Psig, PRE COND 192 HR 30C/60%RH, MSL3							
CY14MB064Q2A (7C1436B5A)	4228534	611229009	*CML-RA*	168	76	0	
CY14MB064Q2A (7C1436B5A)	4228534	611229009	*CML-RA*	288	77	0	
STRESS: TEMPERATURE CYCLE COND. C, -65C TO 150C, PRE COND 192 HRS 30C/60%RH, MSL3							
CY14MB064Q2A (7C1436B5A)	4228534	611229009	*CML-RA*	500	77	0	
CY14MB064Q2A (7C1436B5A)	4228534	611229009	*CML-RA*	1000	76	0	

Document History Page

Document Title: QTP 102204: 1MEG (INDUS) SERIAL NON-VOLATILE SRAM PRODUCT FAMILY, S8 TECHNOLOGY, CMI (FAB 4)
Document Number: 001-70977

Rev.	ECN No.	Orig. of Change	Description of Change
**	3309615	NSR	Initial spec release
*A	3415825	NSR	Updated the list of devices in front page to remove all 5V parts. Corrected Thermal AF in Reliability Failure Rate Summary table from 169 to 170. Remove the EFR/LFR Reliability stress data of 5V parts (CY14ME064xx) and recomputed the EFR ppm and LFR Fit Rate Remove QTP Version in front page
*B	3760661	ZIJ	Added QTP#122802 qualification data and 5V device option to the QTP report, and recomputed the EFR ppm and LFR Fit Rate. Removed CY spec reference numbers from page 7. Changed division name from MID to MPD.
*C	3832435	ZIJ	Added 3 new MPNs – CY14MB064Q2A-SXQ/ CY14ME064Q2A-SXQ/ CY14ME064J2-SXQ with 105C temperature grade devices to the report. Those devices have the exact design and Ios as other Indus MPNs listed in the QTP report and all Ios are covered by ESD and LU test.
*D	4079909	HSTO	Sunset Review Updated test location facility based on current qualified test site. Added the PCT 288 and TCT 100cycle readpoint in Reliability Test Data page for QTP#122802. Added the PCT 288 readpoint in Reliability Test Data page for QTP#071304
*E	4119889	HSTO	Updated the LFR test condition in RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENT.
*F	4303121	HSTO	Updated qualification report template in front page. Added the CG part CG7976AA to the product family in cover page in reference to memo UMJ-238.
*G	4462787	HSTO	Align qualification report based on the new template in the front page

Distribution: WEB

Posting: None